

FAS – Office of Global Analysis (OGA)
United States Department of Agriculture (USDA)
International Operational Agriculture Monitoring Program



Week 2 Summary

1. Production for MY 2008/09 winter wheat and barley crop is forecasted to be lower than the previous year, particularly in the northern rainfed governorates due to poor precipitation during the planting and establishment of winter grains. Significant decreases in crop area are also expected in the central and southern governorates of Baghdad, Diyala, and Wasit.
2. The month of February experienced fair precipitation events to help boost soil moisture, but has decreased since the beginning of March. Cumulative precipitation for MY 2008/09 remains well below normal (Figure 1).
3. A change detection analysis was conducted using MODIS NDVI composites ranging from January 1st to March 4th; crop abundance was compared between MY 2008/09 and the 7-year average. The analysis showed significant decreases in cropland abundance in the northern rainfed governorates and the irrigated region of At Ta'min province. The southern irrigated governorates have remained persistent with proportionate increases and decreases. However, Baghdad, Wasit and Diyala provinces showed concentrated areas of significant decrease compared to the 7--year average (Figure 2).
4. High resolution Quickbird imagery acquired on March 9th, 2008 over As Sulaymaniyah showed that cropland abundance had increased since the last acquisition on January 15th, 2008 (Figure 3). A change detection analysis revealed that cropland area had significantly increased by approximately 2000 hectare (Figure 4). Further acquisitions over Ninawa on March 11th, 2008 revealed no significant change in cropland abundance since January 22nd, 2008 (Figure 5).
5. A preliminary irrigated crop analysis was conducted on the governorates in close proximity to Baghdad using Landsat ETM+ images (March 1st, 2003) and AWiFS IRSP6 image (March 9th, 2008). The MODIS change detection product was used to geolocate areas of significant change (Figure 6). The analysis revealed concentrated areas of decrease located in the provinces of Baghdad and Diyala. An image comparison showed that the 2008 image had significantly less crop cover (Figure 7).

Future analysis will be conducted as imagery is acquired over the southern irrigated governorates. This analysis has potential to locate areas of improved or degraded irrigation infrastructure.

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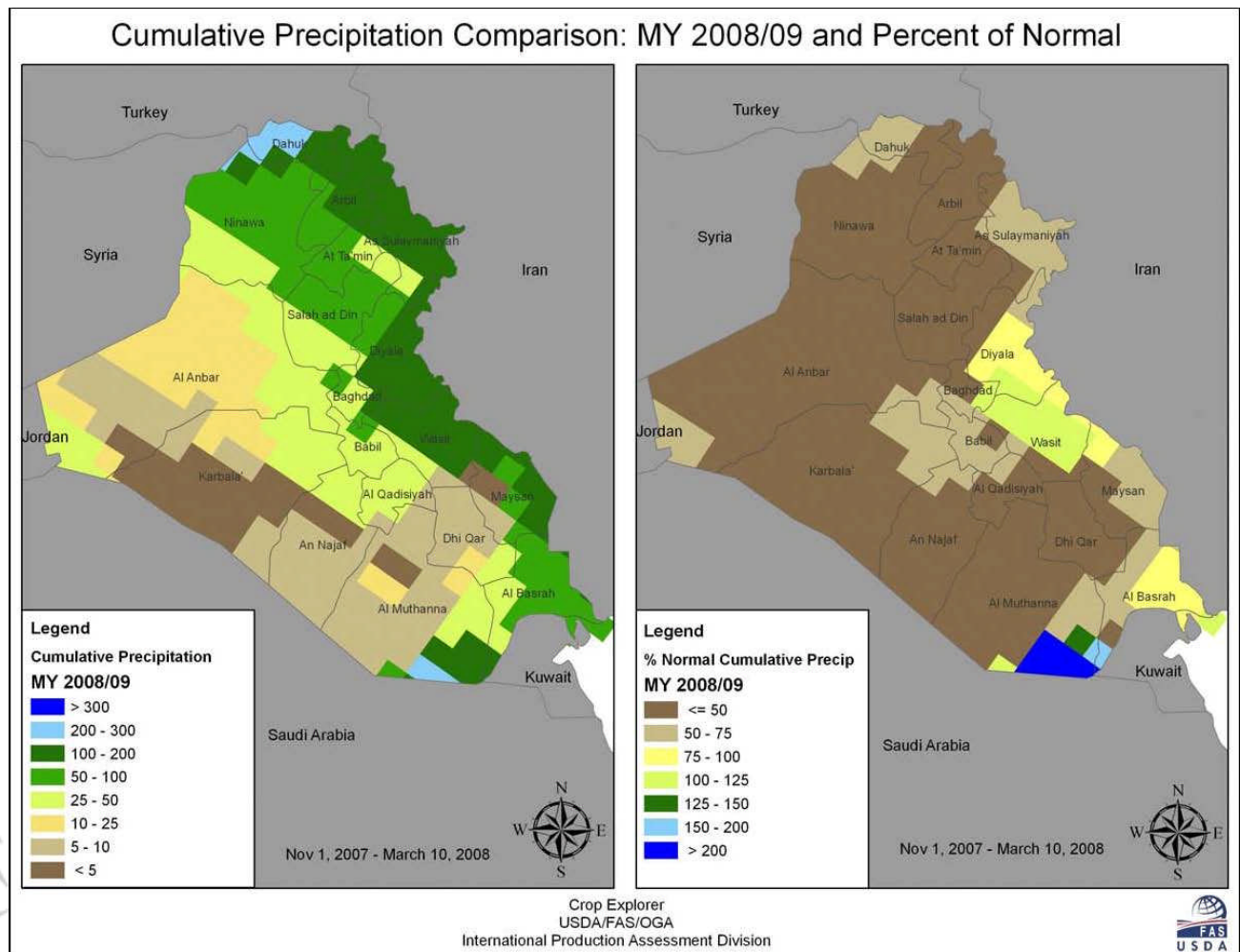


Figure 1: Comparison of decadal cumulative precipitation and percent normal cumulative precipitation between Nov 1st, 2007 and Mar 10th, 2008: MY 2008/09.

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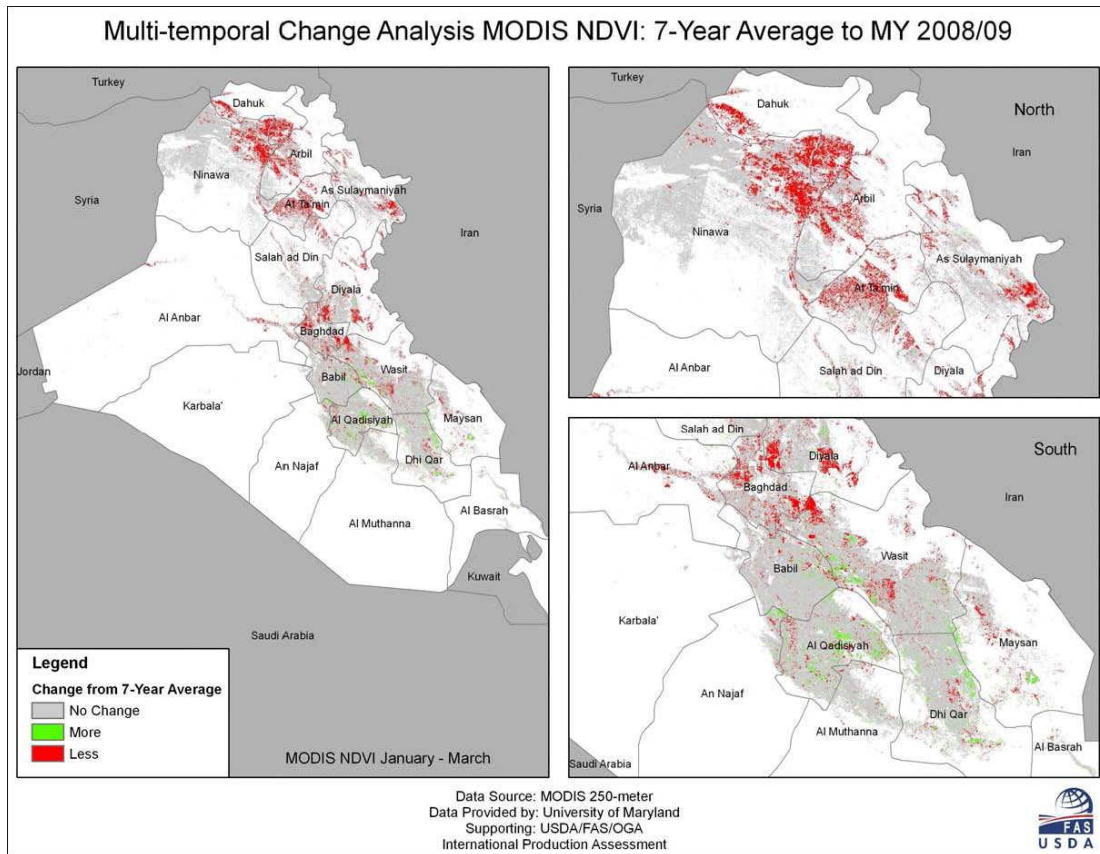


Figure 2: Change analysis comparing cropland abundance between MY 2008/09 and the 7-year average (January 1st to March 4th).

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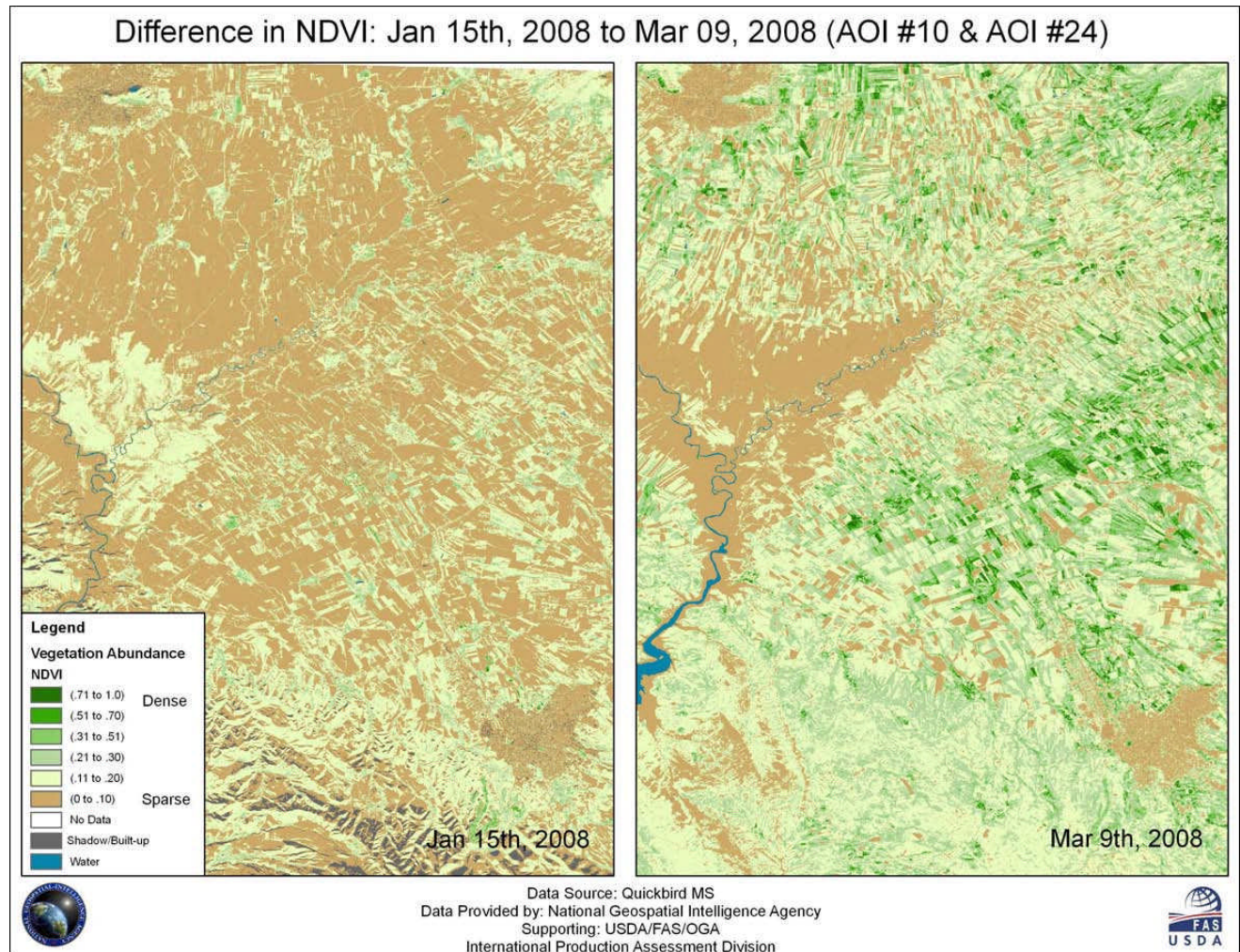


Figure 3: Cropland abundance comparison between January 15th, 2008 and March 9th, 2008: AOI#’s10& 24, As Sulaymaniyah

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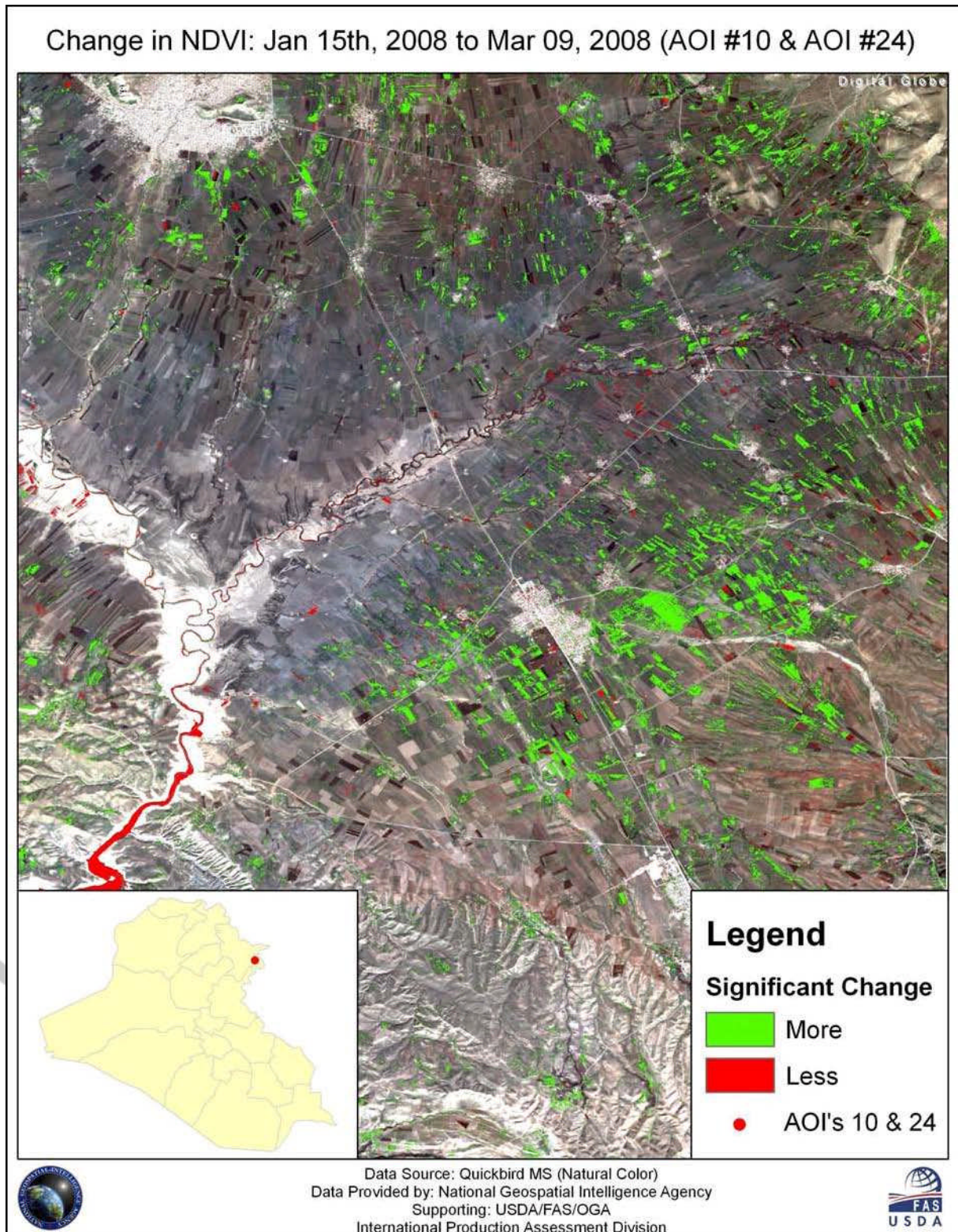


Figure 4: Change detection analysis showing significant increases in cropland abundance. *Note: Significant changeover the river is due to changes in water level (water has no vegetative value, therefore increases in water level is classified as less).

Image Comparison: Jan 22, 2008 and Mar 11, 2008 (AOI #20 Ninawa)

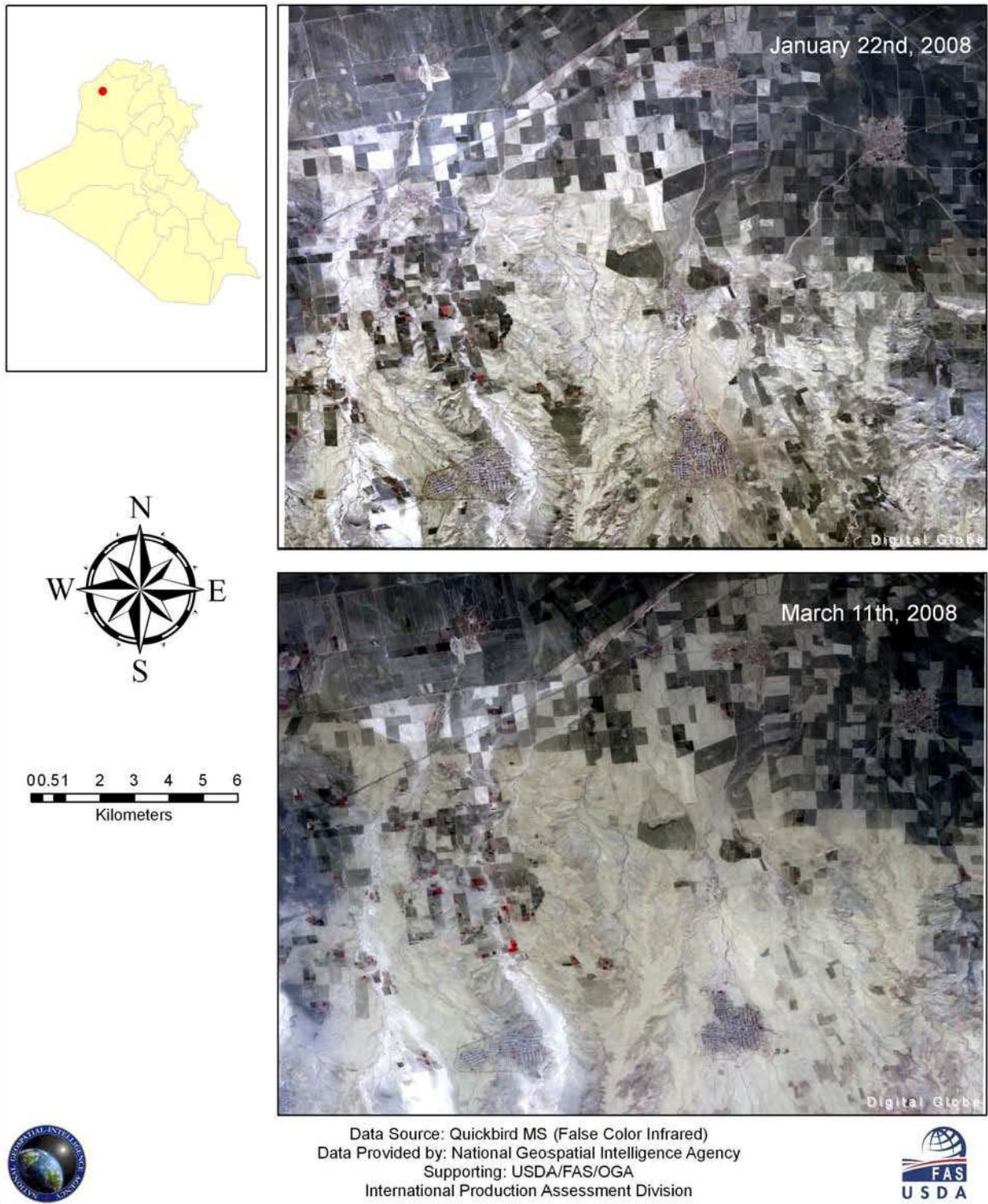


Figure 5: Image comparison showing no change in cropland abundance between January 22nd, 2008 and March 11th, 2008.

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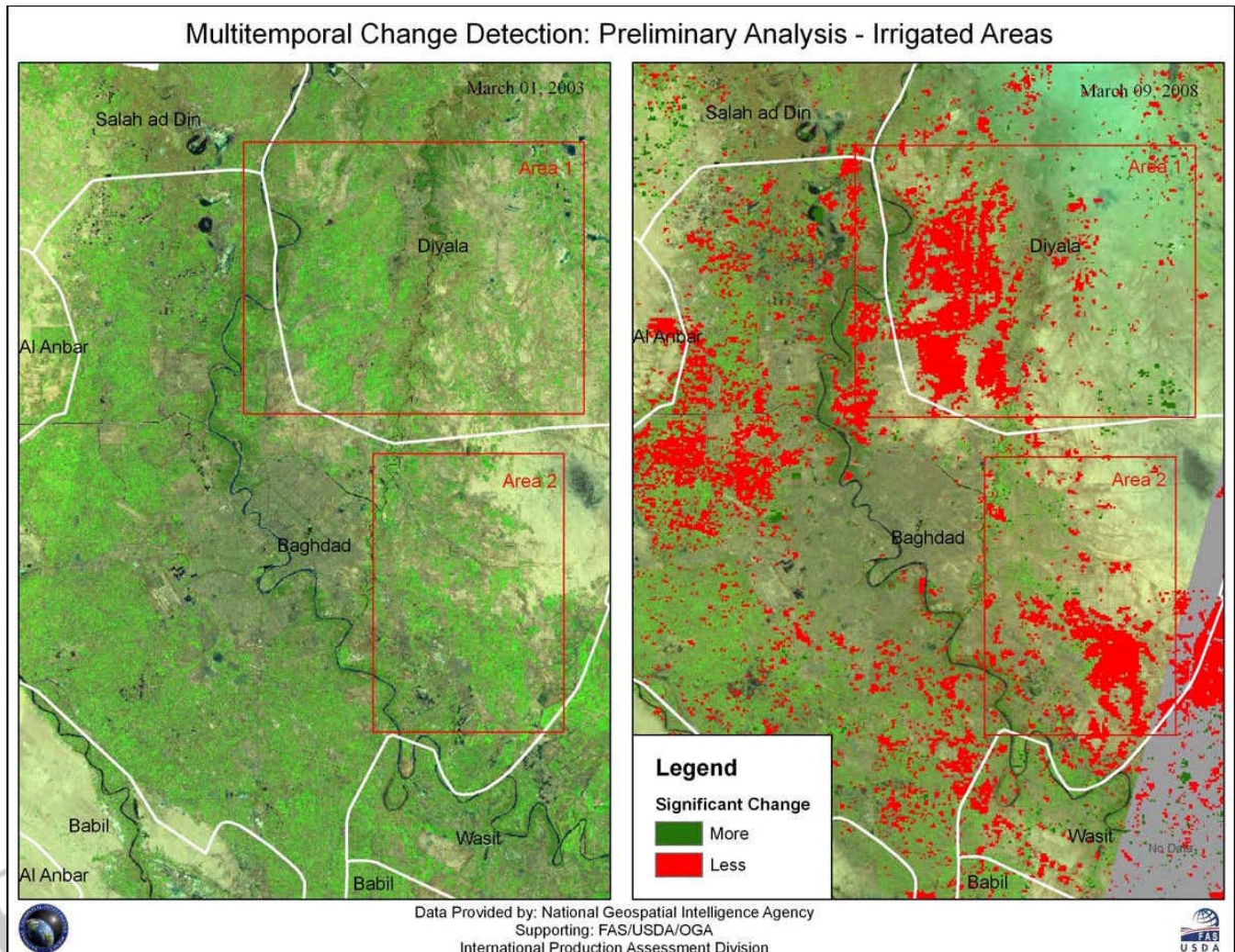


Figure 6: MODIS NDVI change detection product used to locate concentrated areas of significant change from the 7-year average.

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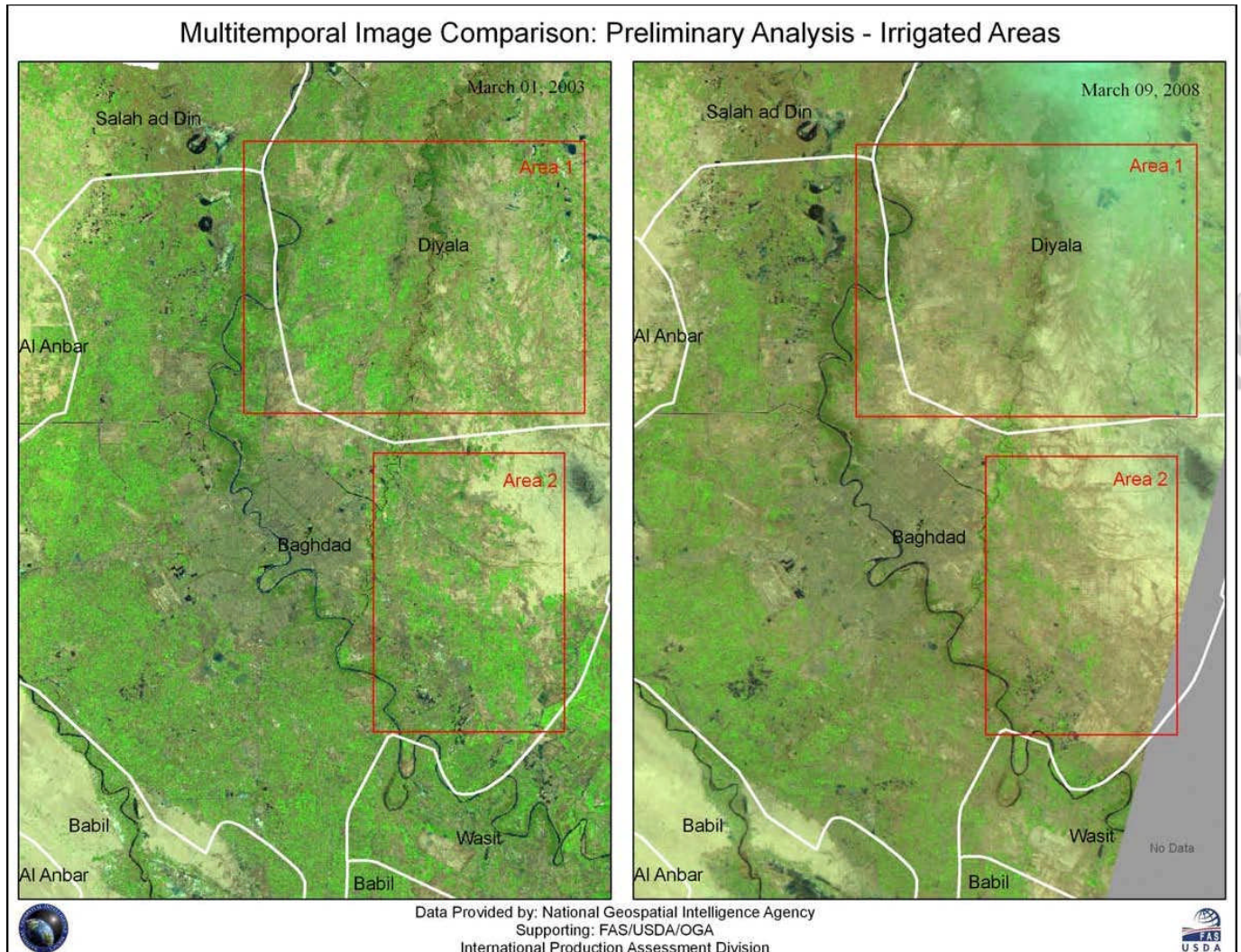


Figure 7: Landsat ETM+ (March 1st, 2003) and AWIFS IRS P-6 (March 9th, 2008) used to compare irrigated areas in Baghdad and Diyala provinces.